INTERNATIONAL BULLETIN OF PLANT PROTECTION

1932 No. 11

DISCOVERIES AND CURRENT EVENTS *

North Africa: Desert Locusts (*Schistocerca gregaria*) (1).

ALGERIA.

1 July 1932 — A somewhat large swarm over Tabelbala.
2 » » — A pink swarm 10 × 4 km flying S. passed 60 km S. E. of Messad.
4 » » — A pink swarm 3 km in length flying N. passed 7 km W. of Fort Lallemand.
5 » » — A pink swarm coming from the S. settled at In-Salah.
7 » » — Hoppers migrating 20 km S. E. of Tebessa.
8 » » — A pink swarm 30 km in length flying N. W.- S. E. passed 35 km N. of Ghardaïa.
15 » » — A large yellow swarm coming from the S. settled in the territory of Beni-Abbès.
21 » — A swarm 20 km in length flying W. passed over the douar of Sidi-Abid (Tebessa).

TUNISIA.

1 July 1932 — A pink swarm of 8 sq. km coming from the S. settled 55 km S. E. of Thala, taking flight towards the S.
16 » » — A pink swarm flying S.-N. passed 75 km S. of Thala.
17 » » — A pink swarm flying W.- S. E. at 55 km S. E. of Thala.
19 » » — A pink swarm 20 km in length flying S.- N. W. passed over Thala.
20 » » — A large pink swarm passed N. E.- S. W. between Thala and Haïdra.

MOROCCO.

12 July 1932 — A pink swarm of 6 sq. km 52 km S. W. of Rich.
19 » » — A pink swarm of 20 sq. km 22 km S. S. E. of Ait-Ourir.
24 » » — A pink swarm 24 km S. of Amizmiz.

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During August 1932, no information was addressed to the Regional Station at Algiers from Algeria, Tunisia, Morocco and Tripolitania.

* In this, as in the next chapter, the countries are arranged in French alphabetical order.

(1) Communication from the Government General of Algeria (Direction des Services Economiques) to the International Institute of Agriculture.

French West Africa: Desert Locusts (*Schistocerca gregaria*) in Mauritania (1).

4 July 1932 — A large pink swarm flying S. E.-N. W. passed 100 km E. of Chinghetti.
5 » » — Small pink swarms 80 km to N. E. of Atar and over Atar.
7 » » — Pink swarm flying S. E.-N. W. over Atar.

Egypt: Desert Locusts (2).

No swarms of *Schistocerca gregaria* were observed in Egypt during July and August, 1932.

Eritrea: Tropical Migratory and Desert Locusts (*Locusta migratorioides* and *Schistocerca gregaria*) (3).

During July 1932, numbers of swarms of locusts were reported over the whole territory of the Colony.

The swarms, which consisted almost entirely of *Locusta migratorioides*, came from the Anglo-Egyptian Sudan and from Abyssinia.

On 3 July a dense swarm of dark brown locusts coming from Omager flew in the direction of Barentú ; another about 2 kilometres in length and over 1 km. in breadth, consisting of yellowish insects and also coming from Omager flew towards Ducambia, where it settled. On the 4th it was seen near Barentú.

On 4 July dark coloured locusts coming from the Adi Abò flew towards Faulinà. On the 5th yellowish locusts coming from the Bircutan passed over the Sittona. This swarm was about 200 metres wide by 400 metres long.

From the 3rd and practically throughout the month swarms of reddish brown locusts coming from the Anglo-Egyptian Sudan, after stopping some time in the plain of Tessenei and laying eggs in the land between the Barbarú mountains, Cassalom and the Gasc, flew in an easterly direction.

Towards the third decade of the month these locusts were reported first in the territory of Agordat, then in the district of Cheren.

After circling for a short time in the latter region they flew towards the eastern plain where they joined a small group of pinkish locusts coming from the north and flying in the direction of the Tabeh valley, which was reported on 1 July from the small post of Carora.

(1) Communication from the Government General of Algeria (Direction des Services Economiques) to the International Institute of Agriculture.

(2) Communication from the Chief Entomologist, Plant Protection Section, Ministry of Agriculture, Giza, to the International Institute of Agriculture.

(3) Communication from the official correspondent of the Institute, Dr. A. De Benedictis, Chief of the Agricultural Bureau of Eritrea, transmitted by the Government of the Colony.

From 13 to 27 July reddish locusts circled about the plain of Sabarguma and in the territory of Massawah.

At Assab on the 18th a swarm coming from inland flew towards the Red Sea.

During the whole month across the Mareb and the Belesa the upland plateau was invaded by numerous swarms of locusts, mostly reddish and coming from Abyssinia.

On the 2nd eggs were laid in the Hazamò, on the 9th in the Gundet, on the 6th, 11th and 26th in the Tzellimà (Seraè).

Towards the middle of the month numbers of hoppers made their appearance in the Seraè, the Acchelè Guzai and the territory of Cheren.

Slight damage was reported to the crops of doura (*Andropogon Sorghum*) and bultuc (*Pennisetum typhoideum*) at Barentú, Telè, Tarchinà (western plain) and in the territory of Cheren ; to maize and dagussa (*Eleusine coracana*) in various localities of the Seraè.

Slight damage was also ascertained at the end of the month in the Hamasien.

In the Dorfú valley many banana plants were damaged ; in the Lamza and the Sahartí damage was done to the wheat, taff-grass (*Eragrostis abyssinica*) and natural pasture.

The numerous centres of hoppers discovered were destroyed by natives and by the specilised staff for the purpose.

It was observed that the swarms had a length and breadth varying from a few hundred metres to over 2 km.

The prevailing direction of flight was from south-west to north-east.

Many groups of hoppers were destroyed by birds (sparrows and starlings).

The swarms were in most cases followed by numbers of storks (rasà).

Hatching of hoppers was reported over extensive areas in the territories over the Ethiopian frontier where no control work was undertaken.

During August 1932 eggs were deposited in numerous localities in the Colony and hoppers appeared in large numbers almost everywhere.

Numbers of swarms made up mainly of *Locusta migratorioides* flew over the upland plateau and the east and west lowland plains.

From 1 to 6 August swarms of a reddish-brown or yellowish colour, or of a colour not specified, coming from the Anglo-Egyptian Sudan, were reported by the small post of Carora (eastern lowland plain) flying south. On 3, 6 and 8 August swarms of a yellowish colour flew over the plain of the Damas and the Agametta in the direction of the upland plateau.

On 3, 4 and 5 August dense swarms of a reddish-brown were reported in the territory of Hamasien.

On 4 and 7 August two reddish swarms coming from the Tigrai passed over the Gundet, one flying north-east, the other north-west. On 13, 16 and 20 August other swarms coming from the Adiabò invaded the territory between the Gasc and the Setit. In the vicinity of Agordat and of Cheren numbers of swarms were reported during the month.

On 18 August a yellowish coloured swarm of *Schistocerca gregaria* coming from the Aidereso flew in the direction of the valley of the Dorfù, circling

for two days over the region. On 21 August yellow locusts coming from the Levant, perhaps from across the Red Sea, settled near Cub-Cub. On 22 August more locusts coming from Ailet flew in the direction of the Tabò valley. On 28 August a swarm of *Schistocerca* coming from the Merettà Sebenè, after keeping along the Mareb settled in the Tzellimà.

It was noted that in general the swarms had a length of approximately one and a half kilometres and a width of 500 metres, with the exception of one swarm coming from the north and flying south-west which was 5 kilometres in length and 1700 metres in breadth. This last was reported on 23 August in the region of Adi Quala.

Nearly all the swarms reported were at some metres from the ground.

Eggs were laid in the neighbourhood of Ducambia, Barentù, Biscia (western lowland plain), in the valley of the Cher-Gher (Cheren), in the Gundet (Seraè) and in the valley of the Tabeh (eastern lowland plain).

Hatching of numbers of hoppers, nearly exclusively of *L. migratorioides*, was reported at Sabderat, along the Gasc, in the vicinity of Biaghela, in the Upper Barca and in the districts of Cheren and Massawah.

In the western lowland plain from 5 to 25 August numerous swarms of *L. migratorioides* coming from the east crossed the frontier flying west.

During August about 500 ha sown with doura (*Andropogon Sorghum*) were damaged in the region of Barentù, along the Gasc and in the Upper Barca (western plain); about 600 ha sown with doura, maize, taff-grass (*Eragrostis abyssinica*), dagussa (*Eleusine coracana*) and wheat (high plateau) and pasture in the valleys of the Tabò and Damas were damaged.

During the whole month hoppers were being destroyed and eggs and adults being collected.

United States of America: Tobacco Downy Mildew in 1932 (1).

Tobacco downy mildew (*Peronospora hyoscyami*), which caused so much alarm among tobacco growers throughout the eastern part of the United States in 1931 but which did little actual commercial damage that year, proved to be both more widely distributed and more destructive this season.

By the end of January, the disease had been found on two beds of volunteer plants in southern Georgia. Towards the end of February, the presence of the disease was reported in Robeson County, North Carolina, near the South Carolina line. About this time, also, it appeared in a number of beds in Madison and Gadsden Counties, Florida, and by March 8 was general throughout the entire shade tobacco section of that State and was known to be widespread in nine Georgia counties.

Surveys made during the first week in April showed the disease to be generally present throughout the tobacco growing regions of Florida, Georgia, South Caro-

(1) Communication from the official correspondent of the Institute, Dr. Neil E. STEVENS, Senior Pathologist, Plant Disease Survey, Bureau of Plant Industry, United States Department of Agriculture, Washington.

lina, and the coastal counties of North Carolina. It was evident by this time that more plants were being killed than during the epidemic of 1931 but there was no way of estimating the extent of the loss. As perhaps significant of the wider spread of the fungus it may be noted that during 1931 it was not reported in any county in South Carolina while this year it was reported from seven counties. Losses from the disease were especially severe in Florence County, South Carolina, were in some cases two-thirds of the plants in a single bed were destroyed. Conditions reached almost the panic stage and growers were reported sprinkling their beds with Bordeaux mixture from sprinkling cans, washtubs, and pails.

By the middle of April, the disease had spread throughout North Carolina, east of Raleigh. Experienced observers reported that approximately one-third of the seed beds throughout this area were badly affected and some severely damaged. On May 31, the disease was found for the first time this year in two tobacco beds in Prince Georges County and by that time it had become more or less serious in ten counties in the southern part of Virginia.

Surveys during the first week in June showed the presence of downy mildew in 4 counties in Maryland, and in 14 counties in Virginia. The high water mark was reached on June 15, when downy mildew was found in two seed beds on one farm in Lancaster County, Pennsylvania. In one of these beds from 2 to 20 % of the plants showed downy mildew. In the other one only a few were affected.

The actual amount of damage caused is, as usual, very difficult to estimate. In Georgia and North Carolina the shortage of plants, caused by the disease, was so serious as to materially retard planting. The shortage was particularly serious in Georgia where many growers were unable to plant entire fields at one time, which resulted in an uneven stand. In extreme cases, the tobacco first planted was ready to harvest while that at the other side of the field was only a few inches high, resulting not only in loss of yield but quality as well.

India: Some Fungal Diseases of Farm Crops Recently Discovered in the Punjab (1).

1. *Phyllosticta rabiei* (Pass.) Trotter has been isolated from the diseased gram plants as one of the fungi which cause the Blight disease in gram (*Cicer arietinum* L.) in North Western parts of the Punjab.

2. A Red Leaf Spot disease of Jowar (*Andropogon Sorghum* Brot.) and Sudan grass (*Andropogon Sorghum* var. *sudanensis* Leppan and Bosman) has been found to occur commonly in many places in this Province. The causal fungus has been identified as *Colletotrichum graminicolum* (Ces.) Wils. = *C. lineola* Corda.

(1) Communication from the official correspondent of the Institute, Mr. Rai Sahib Jai Chand Luthra, M. Sc., D. I. C. (Lond.), I. A. S., Professor of Botany, Punjab Agricultural College, Lyallpur, India.

Studies made on the life history of the fungus have shown that the disease is seed-borne. Several methods for control of the disease by treatment of the seed grain are being tried.

3. Shaftal (*Trifolium resupinatum* L.), an important leguminous fodder crop has been found affected by a fungus related to *Uromyces Trifolii* (Hed.) Lév.

Three stages of the fungus, i. e., Teleuto, Uredo, and æcidial have been recorded.

Polythrincium Trifolii Kze. often occurs on leaflets associated with *Uromyces*.

4. *Tilletia indica* n. sp. has been found in wheat samples collected in the Ambala district.

5. *Striga euphrasioides* Benth., an angiospermic root parasite has been discovered on Sudan grass (*Andropogon Sorghum* var. *sudanensis*) besides on Sugarcane and Jowar (*Andropogon Sorghum*).

LEGISLATIVE AND ADMINISTRATIVE MEASURES

Germany. — By Ordinance of 8 July 1932 the provisions of the Ordinance of 3 November 1931 concerning the San José scale [*Aspidiotus perniciosus*] and the apple maggot [*Rhagoletis pomonella*] [see this *Bulletin*, 1932, No. 2, pp. 24-25] have been extended to include consignments coming from Austria and Hungary. (*Reichsgesetzblatt*, Teil I, Berlin, 18. Juli 1932, Nr. 45, S. 351).

Germany (Anhalt) (1). — By Police Ordinance of 14 July 1932, with a view to the control of asparagus pests it is prescribed that each year asparagus shoots must be cut down before 15 December and burnt on the field. The lower part of the stems remaining, which must not exceed 10 cm in length, must be covered with soil and after being uncovered in the following spring must be burnt before 5 April.

It is forbidden to carry away from the plantation the aerial parts of asparagus plants with the exception of berries for seed purposes.

Western Australia. — On the 27 July 1932 (Agric. No. 2070/25 ; Ex. Co. No. 1275) the Director of Agriculture notified that Double Gee (*Emex australis*) has been declared a noxious weed within the boundaries of the Victoria Plains Road Board District. (*Government Gazette of Western Australia*, Perth, July 29, 1932, No. 36, p. 1089).

Austria. — The Decree No. 222 of 18 July 1932, which came into force on 16 September 1932, fixes the restrictions on importation and transit of plants with a view to preventing the introduction of serious diseases and pests.

(1) Communication from the Biologische Reichsanstalt für Land-und Forstwirtschaft, Berlin-Dahlem, official correspondent of the Institute.

Importation and transit of consignments of any sort attacked by a serious disease or pest and capable of causing the introduction of this disease or pest are forbidden.

The Federal Station for Plant Protection at Vienna and its delegates are to inspect consignments coming from abroad, verify the accompanying certificates and retain at the customs offices any consignments not complying with the phytosanitary requirements, until the Federal Ministry of Agriculture and Forests shall decide whether or not the consignments are admissible for importation or transit.

The present Decree carries no modification of the special measures in force relating to potato wart disease (*Synchytrium endobioticum*) and grape phylloxera (*Phylloxera vastatrix*).

As regards the San José scale (*Aspidiotus perniciosus*) and the apple maggot (*Rhagoletis pomonella*) the present Decree allows importation of fruit trees and shrubs and trees and shrubs with deciduous foliage, including seedlings, suckers and cuttings, on condition that the consignment is accompanied by a certificate issued by the official plant protection service of the country of origin stating that the consignment has been inspected and found free from serious diseases and pests, that it has been disinfected with hydrocyanic acid and that the Federal Ministry of Agriculture and Forests on specific request of the importer has consented to importation.

Any consignment of fresh apples and pears and of apple or pear waste must be accompanied by an official certificate stating that it has been inspected and found free from the San José scale and the apple maggot.

The regulations relating to these two insects are not applicable to consignments in transit provided that the packages are well closed and undamaged or that the wagons are sealed and the consignments addressed directly from one foreign country to another. Other products exempt from these regulations are :— cut flowers, fresh fruits (excepting apples and pears), preserved or dried fruits, vegetables, roots, tubers (potatoes), bulbs, rhizomes and other subterranean parts of plants, and seeds.

A series of special regulations relates to the Colorado potato beetle (*Leptinotarsa decemlineata*).

Importation and transit of fresh potatoes coming from a country where the Colorado beetle occurs are forbidden.

Importation and transit of fresh potatoes having passed through a country infested with the Colorado beetle is allowed only with a special permit accorded by the Federal Ministry of Agriculture and Forests. Consignments from abroad of plants with roots or with soil, bulbs, roots, rhizomes and tubers (except potatoes) must be accompanied by an official certificate from the country of origin stating that the consignment is free from Colorado potato beetle and that this insect does not occur in or within a radius of 100 km of the commune of origin. The same regulation applies in the period from 15 March to 14 November to all kinds of vegetables, tomatoes, eggplants and strawberries.

The countries at present considered as infested with the Colorado potato beetle are the United States of America, Canada and France, not including Corsica

and Departments of France not on the mainland. The phytosanitary certificates mentioned in this Decree must be drawn up in the language of the exporting country and in German. They must be dated not earlier than three weeks previous to the date of consignment.

The Decrees of 29 April 1875, of 31 December 1926, of 2 December 1927, of 26 January 1929 and of 15 June 1929 are annulled. (*Bundesgesetzblatt für die Republik Österreich*, Wien, 13. August 1932, 62. Stuck, Nr. 222, S. 691-694).

Brazil. — On 19 October 1932, the Ambassador of Brazil at Rome deposited with the Italian Ministry for Foreign Affairs the ratification by his Government of the International Convention for Plant Protection, signed at Rome on 16 April 1929 [see this *Bulletin*, 1929, No. 4, pp. 50-55], accompanied by a declaration concerning the scientific institutions referred to in Article 2, Nos. 1 and 2, of the Convention (Art. 22). (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 29 ottobre 1932, anno 73°, n. 251, pp. 4936-4937).

Spain. — By Decree of 1 August 1932 the regulations governing the new Instituto Forestal de Investigaciones y Experiencias were approved.

The research and experiments of the Institute are divided into 13 independent Sections, amongst which are Sections for Entomology, Land Vertebrates and Plant Pathology. (*Gaceta de Madrid*, Madrid, 5 agosto 1932, año CCLXXI, tomo III, núm. 21, págs. 951 a 954).

France. — A Decree of 12 October 1932 provides for the reorganisation of the Plant Protection Service.

The purpose of the Service is to ensure : (1) The scientific study of plant diseases and pests, research and experiments with control methods (phytopathological research entrusted to the central and regional stations of the Institute of Agronomic Research formed into centres of phytopathological research); (2) The sanitary supervision of plant production, the distribution of knowledge of the treatments to be used, the practical organisation of permanent and voluntary defence against diseases and organisms harmful to plants and plant products (permanent and voluntary defence against crop diseases and pests ensured by the farmers concerned and their organisation into groups when necessary with the aid of the State, of departments, communes, agricultural chambers, agricultural offices, etc.) ; (3) The control of the execution of the legalised measures for control of plant diseases and pests, the phytosanitary supervision of importations and exportations, the phytosanitary control of the markets, the control of marks of origin, the control of the standardisation of products and their packings (phytosanitary police ensured by a special Service consisting of a staff of permanent officers and a temporary personnel recruited as the Service demands and within the limits of the amount allocated for the purpose in the Ministry of Agriculture's budget); (4) The issue of phytopathological certificates (' certificat de santé-origine ' [certificate of original healthy condition] and ' certificat phytosanitaire ') and the supervision of the farms from which the products come.

A Consultative Committee for Plant Protection is established under the ' Direction de l'Agriculture '. An Order of the Minister of Agriculture will fix the functions of the Committee.

An Inspector General of Agriculture specially appointed for the purpose by the Minister of Agriculture is responsible for the coordination of the whole Service (phytopathological research, permanent and voluntary defence against crop diseases and pests, phytosanitary police). He is responsible for the satisfactory working of the services, requests instructions from the central Administration and in urgent cases gives the necessary instructions himself and reports them to the Minister.

The Decree of 30 September 1927 [see this *Bulletin*, 1927, No. 11, pp. 178-179] is annulled together with any previous regulations contrary to those of the present Decree. (*Journal Officiel de la République Française*, Paris, 15 octobre 1932, LXIV^{ème} année, n° 242, p. 11075-11077).

Italy. — The Royal Decree-Law No. 913 of 23 June 1932 contains modifications of article 31 of the Law No. 987 of 18 June 1931 containing enactments relating to the protection of cultivated plants and agricultural products against diseases and pests and to the services relating thereto [see this *Bulletin*, 1931, No. 9, p. 166].

The modification of this article is for the purpose of obtaining better regulation of the methods of collecting the contributions established by the ' Consorzî ' for crop protection, and of the obligations and responsibilities of the collectors and of the provincial receivers. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 9 agosto 1932, anno 73°, n. 183, pp. 3658-3659).

*** By Ministerial Decrees of 18 July 1932 the communes of Monteprandone, in the province of Ascoli Piceno, and Valva, in the province of Salerno, have been declared infected with grape phylloxera. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 29 luglio 1932, anno 73°, n. 174, p. 3545).

*** By Ministerial Decrees of 20 July 1932 the compulsory Syndicates Consorzî for olive fly [*Dacus oleae*] control have been reorganised for the communes of Altavilla Milicia, Torre Palma Baida, Termini Imerese and Trabia in the province of Palermo.

Each Syndicate will function for five years from the date of reorganisation. (*Bollettino Ufficiale del Ministero dell'Agricoltura e delle Foreste*, Roma, 16 settembre 1932, anno IV, n. 18, pp. 2704-2709).

*** By Decree No. 37028 of 5 August 1932 the Prefect of the province of Catania has made it obligatory to cut off and burn any branches of lemon trees attacked by the ' mal secco ' [*Deuterophoma tracheiphila*] in the communes of Belpasso, Castiglione di Sicilia, Gravina, Misterbianco, Paternò, Tremestieri Etneo. Holders of land on which there are diseased trees will be held responsible for carrying out the destruction. (*Il Coltivatore Siciliano*, Catania, settembre 1932, anno XI, n. 9, p. 265).

Morocco (French Zone). — A Decree of the Director General of Agriculture, Commerce and Land Settlement, dated 10 June 1932, contains the following measures relating to the destruction of the Mediterranean Fruit-fly [*Ceratitis capitata*].

Art. 1. — The persons specified in Art. 4, of the Vizirial Decree of 18 April 1932 [see this *Bulletin*, 1932, No. 7, pp. 112-113] must collect or provide for the collection of fruits fallen to the ground from the trees, shrubs or plants indicated below :—

(1) Trees and Shrubs.

(*a*) Family of the Aurantiaceae. — Seville orange (*Citrus Bigaradia*), citron (*C. Medica*), lemon (*C. Limonum*), trifoliate orange (*C. triptera* = *Poncirus trifoliatus*), kumquat (*Fortunella japonica*), mandarin orange and its hybrids (*C. nobilis*), orange and its varieties (*C. Aurantium*), Chinese orange (*C. japonica*), Portugal orange and its varieties (*C. sinensis*), shaddock (*C. decumana*).

(*b*) Family of the Rosaceae. — Apricot (*Prunus Armeniaca*), almond (*P. Amygdalus*), azarole (*Crataegus Azarolus*), cherry (*P. Cerasus*), quince (*Pyrus Cydonia*), loquat (*Eriobotrya japonica*), medlar (*Pyrus germanica*), peach (*Prunus Persica*), pear (*Pyrus communis*), apple (*P. Malus*), plum (*Prunus domestica*), bullace (*P. insititia*), Japanese plum (*P. salicina*).

(*c*) Various Families. — Kai apple (*Aberia caffra*), cherimoyer (*Anona Cherimolia*), fig (*Ficus Carica*), pomegranate (*Punica Granatum*), jujubes (*Zyzyphus vulgaris, Z. Spina-Christi*), persimmons (*Diospyros decandra, D. Kaki*).

(2) Herbaceous Plants.

Eggplant (*Solanum Melongena*) ; tomato (*S. Lycopersicum*).

Art. 2. — Persons concerned must place in these trees and shrubs traps containing a bait prepared in accordance with the formulae established by the ' Direction générale de l'Agriculture, du Commerce et de la Colonisation ' (Crop Protection).

Art. 3. — After the crop has been picked any fruits remaining on the trees or shrubs and any waste fruits and fruits of herbaceous species found on the plants, on the ground or in any other place must be collected, sterilised or destroyed.

Art. 4. — Any plant products in any estate, orchard, garden, shop, packing shed, market, etc., found to be infested with the Mediterranean Fruit-fly, must be immediately destroyed or utilised in such a way that the killing of larvae is ensured, in default of which the products will be confiscated by officials of the ' Direction générale de l'Agriculture ' or by one of the authorities specified in Art. 34, of the Dahir of 20 September 1927, containing the plant sanitary police regulations for the French zone of the Sherifian Empire.

Art. 5. — Fruits from trees, shrubs and herbaceous plants collected on the ground or picked after the harvest, also fruit waste of the above-named species, must be buried in the ground, or mixed with, or covered with a 5 cm. layer of, quicklime and covered over with 60 cm. of soil.

Such fruits and fruit waste may also be sterilised by boiling for 15 minutes. (Empire Chérifien. Protectorat de la République Française au Maroc. *Bulletin Officiel*, Rabat, 24 juin 1932, XXIème année, nº 1026, p. 738).

*** The Vizirial Decree of 31 August 1932 (28 rebia II 1351) regulating importation into Morocco of plants or plant parts capable of carrying the European corn borer (*Pyrausta nubilalis* Hübn.) provides as follows :—

Art. 1. — Importation and transit in the French Zone of the Sherifian Empire of the following are forbidden :—

(1) Living plants or culms, straw, leaves, roots, husks, rachides and inflorescences of maize (*Zea Mays* L.), of sorghums (*Sorghum vulgare* Pers. [=*Andropogon Sorghum* Brot.], *S. saccharatum* Moench [= *A. saccharatus* Kunth]) and of all other cultivated species of the genus *Sorghum* or *Andropogon*, of millet (*Panicum miliaceum* L., *P. italicum* L. [= *Setaria italica* Beauv.]) and of other cultivated species of the genus *Panicum*, and, in general, of any part or residue of these plants, with the exception of the fruits (*vulg.* seeds), of whatever origin ;

(2) Any part or residue of plants of hemp (*Cannabis sativa* L. = *C. indica* Lam.), with the exception of seeds and fibre ;

(3) Whole plants, living or dead, of Provence reed (*Arundo Donax* L.), or parts of this plant, with the exception however of peeled and sawn stems used in the making of packings ;

(4) Products of any nature the packings of which are composed of the above-named plants or of parts thereof.

Art. 2. — Any consignment containing the products specified in the preceding article will be returned or destroyed, according to the wishes of the consignee or his representative, in accordance with the conditions contained in article 7 of the Dahir of 20 September 1927 (23 rebia I 1346). (Empire Chérifien. Protectorat de la République Française au Maroc. *Bulletin Officiel*, Rabat, 23 septembre 1932, XXIème année, nº 1039, p. 1103-1104).

Portugal. — On 30 October 1932, the Italian Ministry of Foreign Affairs informed the International Institute of Agriculture that Portugal deposited in the said Ministry on 28 May 1932, the ratification of the International Convention for Plant Protection, which was signed at Rome on 16 April 1929 [see this *Bulletin*, 1929, No. 4, pp. 50-55], accompanied by a declaration concerning the institutions referred to in Art. 2, Nos. 1 and 2, of the Convention (Art. 22).

Czechoslovakia. — The Government Ordinance No. 140 of 22 July 1932, based on the Law No. 165 of 2 July 1924 relating to plant production, makes the following institutions responsible for plant protection :—

(1) The Institute of Phytopathology attached to the State Agronomical Research Institutes at Prague, to act for Bohemia ;

(2) The Phytopathological Section of the Agronomical Research Institute at Brno assisted by the State Agronomical Research Station at Opava, to act for Moravia and Silesia ;

(3) The Institute of Phytopathology, Section of the State Agronomical Research Institutes, at Bratislava, to act for the western part of Slovakia. The eastern part will be undertaken by the Institute of Phytopathology, Section of the State Agronomical Research Institutes, at Košice.

The rights of control conferred on these Institutes may be executed through the intermediary of certain Agronomical Research Stations specially authorised for the purpose by the Ministry of Agriculture.

In order to establish an information service to report any danger to crops the Ministry in agreement with the Institutes concerned will nominate phytopathological observers. (*Sammlung der Gesetze und Verordnungen des čechoslovakischen Staates*, Prag, 16. August 1932, 47. Stück, S. 443-444).

Uruguay. - By ' resolución ' of 19 May 1932, as from that date the services of ant destruction for which the ' Sección Fomento y Defensa Agrícola de la Dirección de Agronomía ' has been responsible will be charged to the persons concerned. (*Ministerio de Industrias. Dirección de Agronomía. Publicación Mensual*, Montevideo, 1932, año IV, n.° 10, pág. 212).

*** By ' resolución ' of 16 June 1932 *Ceratitis capitata* (Mediterranean Fruit-fly) and *Anastrepha fraterculus* (West Indian Fruit-fly) are declared agricultural pests. (*Ibid.*, pág. 212).

RECENT BIBLIOGRAPHY

ADAMS, J. F. Bacterial and fungous flora in certain sulphur fungicides. *Phytopathology*, Lancaster, Pa., 1932, Vol. 22, No. 9, pp. 785-786.

ANDRÉ, MARC. Note sur un Acarien (*Penthaleus major* Dugès) nuisible aux plantes potagères. *Bulletin du Muséum National d'Histoire Naturelle*, Paris, 1932, 2e série, tome IV, n° 3, p. 284-291, fig. 1-8. Index bibliographique, p. 290-291.
[Particularly injurious to lettuce].

APPEL. Der Schutz des deutschen Kartoffelbaues gegen die Koloradokäfer-Gefahr. *Archiv der Deutschen Landwirtschaftsrats*, Berlin 1932, 50. Jahrg., S. 108-123, 1 Karte.
[*Leptinotarsa decemlineata*].

BADOUX, H. Nouvelle épidémie de la rouille des aiguilles de l'épicéa. *Journal Forestier Suisse*, Berne, 1932, 83me année, n° 9/10, p. 232-233.
[*Chrysomyxa Rhododendri*].

BALLY, W. Bemesting van koffietuinen, die door aaltjes besmet zijn. (Voorlooping verslag over de op de onderneming Sengon genomen proeven). *Archief voor de Koffieculturur in Nederlandsch-Indië*, Soerabaia 1932, 6e jaarg., n° 2, blz. 43-56, fig. 1-2.
[Manuring trials on coffee attacked by *Tylenchus coffeae* and *T. similis*].

Bernès, J. Les sphinx, parasites de la vigne, en 1932, dans le Var. *Le Progrès Agricole et Viticole*, Montpellier, 1932, 49e année, nº 25, p. 596-598.
[*Deilephila livornica*].

Billaudelle, L. La méticuleuse et ses dégâts dans les jardins. *Revue Horticole*, Paris, 1932, 104e année, nº 9, p. 207-208, fig. 61-62.
[*Phlogophora meticulosa*].

Blattný, Ctibor. Sbírka škůdců a chorob chmele v Československém Zemědělském Museu v Praze. *Věstník Československého Zemědělského Musea*, Praha 1932, roč. V, čís. 3, str. 228-230.
[In Czech, with title and summary in German, French and English. The collection of pests and diseases of the hop in the Agricultural Museum of Czechoslovakia].

Bonaventura, Gustavo. La macchina decuscutatrice « Bedell » e la germinabilità di alcune sementi di leguminose foraggere decuscutate con la stessa macchina. *L'Italia Agricola*, Roma, 1932, anno 69, n. 9, pp. 831-835, 1 fig.
[*Cuscuta* spp.].

Bongini, V. Un coccide non comune. *Bollettino del Laboratorio Sperimentale (Regio Osservatorio Regionale) di Fitopatologia*, Torino, 1932, anno 9º, n. 5, pp. 70-71.
[*Asterolecanium aureum* on *Anthurium* in the Botanic Garden at Turin].

Boni, Giglio. Manuale pratico di frutticoltura. Quarta edizione riveduta e aumentata. (Biblioteca dell'insegnamento commerciale e professionale). Torino, S. Lattes & C., editori, 1932, VIII + 377 pp., 150 figg., 1 ritr.
[Includes a chapter headed : Nemici e parassiti dei fruttiferi (pp. 208-262, figg. 95-118)].

Börner, Carl. Apfel- und Dorn-Blutlaus. *Anzeiger für Schädlingskunde*, Berlin 1932, VIII. Jahrg., Heft 5, S. 52-54.
[*Eriosoma lanigerum*, *E. crataegi*].

Boselli, F. B. Studio biologico degli Emitteri che attaccano le nocciuole in Sicilia. *Bollettino del Laboratorio di Zoologia Generale e Agraria del R. Istituto Superiore Agrario in Portici*, Spoleto, 1932, vol. XXVI, pp. 142-309, figg. I-LII, tav. 1-2. Bibliografia, p. 306.
[The writer's research, fully confirming the results of previous observers, indicates as the cause of the so-called 'cimiciato' of hazel nuts, the following Heteroptera : *Gonocerus acuteangulatus*, *Palomena prasina*, *Carpocoris pudicus* var. *fuscispinus*, *Piezodorus lituratus*, *Rhaphigaster nebulosa*, *Dolycoris baccarum*, *Lygaeus pandurus*].

Boutaric, Augustin, Doladilhe, Maurice, et Pietri, Maurice. Sur le rôle des mouillants dans la fixation, par les tissus végétaux, des matières colorantes utilisées pour le traitement des maladies cryptogamiques. *Revue de Viticulture*, Paris, 1932, 39e année, tome LXXVII, nº 1989, p. 85-86.

Bredo, H. J. La lutte anti-acridienne au Congo Belge. *Agriculture et Elevage au Congo Belge*, Bruxelles, 1932, 6ème année, nº 12, p. 139-140.
[*Locusta migratoria migratorioides*, *Nomadacris septemfasciata*, *Schistocerca gregaria*].

Bruner, S. C. Modo de combatir las hormigas bravas. *Revista de Agricultura, Comercio y Trabajo*, Habana, Cuba, 1932, año XIV, vol. 14, núm. 2, págs. 51 y 52.
[*Solenopsis geminata*].

Bruner, S. C., y Arango, Oscar. La mosca prieta y modos de combatirla. *Revista de Agricultura, Comercio y Trabajo*, Habana, Cuba, 1932, año XIV, vol. 14, núm. 2, págs. 81 a 87.
[*Aleurocanthus woglumi*].

Bruner, S. C., y Arango, Oscar. Métodos de combatir la bibijagua. *Revista de Agricultura, Comercio y Trabajo*, Habana, Cuba, 1932, año XIV, vol. 14, núm. 2, págs. 73 a 77.
[*Atta insularis*].

Bruneteau, J. A propos des invasions de Sphinx. Le *Deilephila lineata* F. var. *livornica* Esp. *Revue di Zoologie Agricole et Appliquée*, Bordeaux, 1932, 31e année, nº 1, p. 9-15.

Bryan, Mary K. Color variation in bacterial plant pathogens. *Phytopathology*, Lancaster, Pa., 1932, Vol. 22, No. 9, pp. 787-788.
[*Aplanobacter michiganense, Bacterium campestre, Bact. vesicatorium, Bact. Cucurbitae*].

Bouhelier, R. L'anthracnose du pois chiche (*Phyllosticta Rabiei* Trott.). *La Terre Marocaine*, Casablanca, 1932, nº 9, p. 25-27, fig. 1.

Buisman, Christine. Over het voorkomen van *Ceratostomella ulmi* (Schwarz) Buisman in de natuur. *Tijdschrift over Plantenziekten*, Wageningen 1932, 38e jaarg., 9e aflev., blz. 203-204.

Burke, H. E. Two destructive defoliators of lodgepole pine in the Yellowstone National Park. *United States Department of Agriculture, Circular No. 224*, Washington, D. C., 1932, 19 pp., 9 figs. Literature cited, p. 19.
[*Argyrotaemia pinatubana* and *Neodiprion burkei* injurious to *Pinus contorta*].

Burkholder Walter H., and Guterman, E. F. Synergism in a bacterial disease of Hedera helix. *Phytopathology*, Lancaster, Pa., 1932, Vol. 22, No. 9, pp. 781-784.
[*Phytomonas Hederae*].

Cambonie, L. La lutte contre le mildiou. Principales causes d'insuccès. *La Vie Agricole et Rurale*, Paris, 1932, 21e année, nº 37, p. 175-176.
[*Plasmopara viticola*].

Capucci, Carlo. Un parassita della fava da sovescio. *Giornale di Agricoltura della Domenica*, Roma, 1932, anno XLII, n. 40, p. 466, 2 figg.
[*Ascochyta Pisi*].

Chavent, Guillaume. Caisse de prévoyance contre les calamités agricoles. *La Terre Marocaine*, Casablanca, 1932, nº 9, p. 12-15.

Chevalier, Aug. Nouvelles observations sur les sauterelles du Sahara, du Niger et du Soudan français. *Revue de Botanique Appliquée et d'Agriculture Tropicale*, Paris, 1932, 12e année, Bulletin nº 131, p. 509-517 ; Bulletin nº 132, p. 622-628, fig. 20. Bibliographie, p. 628.
[*Schistocerca gregaria, Locusta migratoria migratorioides, Anacridium moestum melanorhodon, Acanthacris ruficornis, Poecilocerus hieroglyphicus*].

Chiappelli, R. I nemici del riso e la carpicoltura. *Il Giornale di Risicoltura*, Vercelli, 1932, vol. XXII, n. 8, pp. 125-126.

Clausen, Curtis P., and Berry, Paul A. The citrus blackfly in Asia, and the importation of its natural enemies into tropical America. *United States Department of Agriculture, Technical Bulletin No. 320*, Washington, D. C., 1932, 58 pp., 19 figs. Literature cited, p. 58.
[*Aleurocanthus woglumi*].

Cotter, Ralph U. A new form of oat stem rust from a barberry area. *Phytopathology*, Lancaster, Pa., 1932, Vol. 22, No. 9, pp. 788-789.
[*Puccinia graminis* f. *Avenae*].

Courtler, E. A. The cultivation and manufacture of tea in Ceylon and India. *Department of Agriculture, Straits Settlements and Federated Malay States, General Series, No. 9*, Kuala Lumpur, 1932, V + 94 pp., 5 pls.
[Includes *inter alia* two chapters headed : Diseases (pp. 49-53) ; Pests (pp. 53-56)].

Cox, James A. *Ascogaster carpocapsae* Viereck, an important larval parasite of the codling moth and oriental fruit moth. *New York State Agricultural Experiment Station, Geneva, N. Y., Technical Bulletin No. 188*, Geneva, N. Y., 1932, 26 pp., 13 figs., chart I.
[*A. carpocapsae* parasite of *Carpocapsa pomonella* and *Grapholitha molesta*].

Daniel, Derrill MacCollough. *Macrocentrus ancylivorus* Rohwer, a polyembryonic braconid parasite of the oriental fruit moth. *New York State Agricultural Experiment Station, Geneva, N. Y., Technical Bulletin No. 187*, Geneva, N. Y., 1932, 101 pp., 18 figs. Literature cited, pp. 100-101.
[*M. ancylivorus* parasite of *Grapholitha molesta*].

Defrance, Ph. La mouche de l'olive. *La Terre Marocaine*, Casablanca, 1932, nº 9, p. 16-17.
[*Dacus oleae*].

De Lépiney, J., et Mimeur, J.-M. Notes d'Entomologie agricole et fruitière du Maroc. Empire Chérifien. Archives Scientifiques du Protectorat Français (Publiées sous la direction du Dr Jacques Liouville). *Mémoires de la Société des Sciences Naturelles du Maroc*, Rabat-Paris-Londres, MCMXXXII, nº XXXI, p. [V] + 195.
[First survey of the parasites of useful plants in Morocco].

Della Beffa, G. Sopra alcuni Tentredinidi dannosi osservati quest'anno in Piemonte. *Bollettino del Laboratorio Sperimentale (Regio Osservatorio Regionale) di Fitopatologia*, Torino, 1932, anno 9°, n. 5, pp. 71-76.
[*Arge rosae, Lyda inanita, Hoplocampa brevis, Lophyrus pini*, etc.].

De Marzi, Guido. Variegatura o parziale albinismo del frumento. *Il Gazzettino Agricolo*, Padova, 1932, anno X, n. 16, p. 1.

D'Ippolito, G. Esperienze di lotta contro la mosca delle ciliege. *Annali della R. Stazione Sperimentale Agraria di Modena. Bollettino delle Ricerche e della Sperimentazione*, Modena, 1932, n. ser., vol. II, anni 1930-1931, pp. 281-286, 1 fig.
[*Rhagoletis cerasi*].

Donandt, Siegfried. Untersuchungen über die Pathogenität des Wirtelpilzes Verticillium alboatrum R. u. B. *Zeitschrift für Parasitenkunde*, Berlin 1932, 4. Bd., 4. (Schluss-) Heft, S. 653-711, Abb. 1-9. Quellenverzeichnis, S. 708-711.

Dover, Cedric. Entomological investigations on the spike-disease of sandal (Santalum album Linn.). Part. I. An introductory survey of the problem. *The Indian Forest Records (Entomology Series)*, Calcutta, 1932, Vol. XVII, Pt. I, pp. 1-53, figs. 1-8. References to literature, pp. 50-53.

Draghetti, A. Il decorso della malattia degli olmi nel Modenese. *Annali della R. Stazione Sperimentale Agraria di Modena. Bollettino delle Ricerche e della Sperimentazione*, Modena, 1932, n. ser., vol. II, anni 1930-1931, pp. 300-304.
[*Graphium Ulmi*].

Drago, Antonino. La lotta obbligatoria contro le cocciniglie degli agrumi. *L'Italia Agricola*, Roma, 1932, anno 69°, n. 7, pp. 597-606.
[Particularly *Chrysomphalus dictyospermi*].

Faes, H., et Bovey, P. Le doryphore du Colorado et la défense de nos cultures de pommes de terre. *La Terre Vaudoise*, Lausanne, 1932, XXIV^e^ année, n° 37, p. 625-628, fig. 1-4 ; n° 38, p. 639-643, fig. 8.
[*Leptinotarsa decemlineata*].

Faure, Jacobus C. The phases of locusts in South Africa. *Bulletin of Entomological Research*, London, 1932, Vol. XXIII, Pt. 3, pp. 293-405, pls. XIV-XXXVIII, 1 map. References, pp. 404-405.
[*Locustana pardalina, Nomadacris septemfasciata, Locusta migratoria migratorioides, Schistocerca gregaria*].

Feytaud, J. La question doryphorique au début de la campagne 1932. *Revue de Zoologie Agricole et Appliquée*, Bordeaux, 1932, 31^e^ année, n° 5, p. 65-78, fig. 9-11.
[*Leptinotarsa decemlineata*].

Fleck, Wilhelm. Hielo seco y oxido de etileno. Un nuevo remedio para destruir los parásitos del trigo. *Ministerio de Industrias. Dirección de Agronomía. Publicación Mensual*, Montevideo, 1932, año IV, n.° 9, págs. 184 y 185.

Folsom, J. W. Insect enemies of the cotton plant. *U. S. Department of Agriculture, Farmers' Bulletin No. 1688*, Washington, D. C., 1932, 29 pp., 34 figs.
[*Anthonomus grandis, A. grandis* var. *thurberiae, Alabama argillacea, Heliothis obsoleta, Psallus seriatus, Aphis gossypii, Pectinophora gossypiella, Bucculatrix thurberiella, Tetranychus telarius, Strymon melinus, Prodenia ornithogalli, Dysdercus suturellus, Adelphocoris rapidus, Lygus pratensis, L. elisus, Loxostege similalis, Estigmene acraea, Laphygma frugiperda, Chalcodermus aeneus, Phyllophaga cribrosa, P. lanceolata, P. farcta, Melanoplus differentialis, Brachystola magna, Noctuidae, Homalodisca triquetra, Oncometopia undata, O. lateralis, Aulacizes irrorata, Anuraphis maidiradicis, Monocrepidius vespertinus, Horistonotus uhleri*].

Fransen, J. J. De kleine Iepenspintkever Scolytus (Eccoptogaster) multistriatus Mrsh. als verbreider der Iepenziekte. *Tijdschrift over Plantenziekten*, Wageningen 1932, 38e jaarg., 9e aflev., blz. 197-202, fig. 1-2, pl. XI-XII. Literatuuropgave, blz. 201.
[*Scolytus multistriatus* and *Graphium Ulmi*].

Friedrichs, G. Ein Jahr Überwachung der Lohnsaatbeizstellen in Westfalen. *Nachrichtenblatt für den Deutschen Pflanzenschutzdienst*, Berlin 1932, 12. Jahrg., Nr. 7, S. 53-54.

Fulmek, L. Die San-José-Schildlaus (Aspidiotus perniciosus Comst.) in Mitteleuropa. *Neuheiten auf dem Gebiete des Pflanzenschutzes*, Wien 1932, Nr. 1 u. 2, S. 1-6.

Gioelli, Felice. Fenomeni di antagonismo in « Penicillium digitatum » (Pers.) Sacc. e « Penicillium italicum » Weber in natura. (Nota preliminare). *Rivista di Patologia Vegetale*, Pavia, 1932, anno XXII, n. 7-8, pp. 195-200, figg. 1-3.

Gioelli, Felice. Sopra una probabile azione delle concimazioni potassiche contro il marcio dei frutti degli agrumi. *Rivista di Patologia Vegetale*, Pavia, 1932, anno XXII, n. 7-8, pp. 189-198.
[*Penicillium digitatum*].

Gleisberg, W., und Mentzel, F. Raupenleim-Laboratoriums-Prüfung 1931. *Anzeiger für Schädlingskunde*, Berlin 1932, VIII. Jahrg., Heft 6, S. 61-66, Abb. 1-7.

Goetze, G. Zwei neue Methoden zum quantitativen Studium der Giftigkeit von Insektiziden. *Anzeiger für Schädlingskunde*, Berlin 1932, VIII. Jahrg., Heft 5, S. 54-57, Abb. 1-2.

Gomez-Menor O., Juan. Un insecto llamativo enemigo de los cítricos. *Revista de Agricultura y Comercio*, Santo Domingo, Rep. Dominicana, 1932, vol. XXIII, núm. 34, págs. 534 y 535, 1 fig.
[*Icerya montserratensis*].

Goodey, T. The genus *Anguillulina* Gerv. & v. Ben., 1859, vel *Tylenchus* Bastian, 1865. *Journal of Helminthology*, London, 1932, Vol. X, Nos. 2-3, pp. 75-180, figs. 1-117. References, pp. 174-180.

HODSON, W. E. H. Narcissus pests. *Ministry of Agriculture and Fisheries, Bulletin No. 51*, London, 1932, pp. VIII + 40, 15 figs. Literature, pp. 39-40.
[*Merodon equestris, Eumerus tuberculatus, E. strigatus, Anguillulina dipsaci, Rhizoglyphus echinopus, Tarsonemus approximatus* var. *narcissi, Arion hortensis, Agriolimax agrestis, Anguillulina pratensis,* 'Yellow Stripe' (almost certainly a virus disease)].

HOPKINS, J. C. F. A list of plant diseases occurring in Southern Rhodesia. Supplement 2 (June, 1931, to May, 1932). *The Rhodesia Agricultural Journal*, Salisbury, Rhodesia, 1932, Vol. XXIX, No. 6, pp. 462-467.

HOUBEN, I. Über insektentötende Pflanzenstoffe. I. Die Derris-Giftstoffe. A. Geschichtliches und Literatur. *Anzeiger für Schädlingskunde*, Berlin 1932, VIII. Jahrg., Heft 7, S. 83-88.

HUSAIN, M. AFZAL. Leaf-curl in cotton and other plants. *Nature*, London, 1932, Vol. 130, No. 3278, p. 312.

HUSAIN, M. AFZAL, and KHAN, ABDUL WAHID. Food plants of *Dialeurodes citri*, Ashmead (Aleyrodidae). Is jasminum one of them ? *The Indian Journal of Agricultural Science*, Calcutta, 1932, Vol. II, Pt. III, pp. 242-253, pls. XVI. References, p. 253.

HUTSON, J. C. Some insect pests of tea in Ceylon (*Continued*). – The red slug (*Heterusia cingala* Moore). *The Tropical Agriculturist*, Peradeniya, Ceylon, 1932, Vol. LXXIX, No. 1, pp. 3-18, pl. X. Reference, p. 18.

JOHNSON, JAMES, and GRANT, THEODORE J. The properties of plant viruses from different host species. *Phytopathology*, Lancaster, Pa., 1932, Vol. 22, No. 9, pp. 741-757. Literature cited, p. 757.

LABES, BODO. Wird auch die deutsche Schweinezucht durch den Koloradokartoffelkäfer bedroht ? *Zeitschrift für Schweinezucht, Schweinemast und Schweinehaltung*, Neudamm 1932, 39. Jahrg., Nr. 32, S. 523, 1 Abb.
[*Leptinotarsa decemlineata*].

LAURITZEN, J. I. Development of certain storage and transit diseases of carrot. *Journal of Agricultural Research*, Washington, D. C., 1932, Vol. 44, No. 12, pp. 861-912, fig. 1. Literature cited, pp. 911-912.
[*Sclerotinia sclerotiorum, Rhizopus Tritici, R. nigricans, Bacillus carotovorus, Botrytis cinerea* on *Daucus Carota*].

LESNE, PIERRE. Le pou de San-José. *Journal d'Agriculture Pratique*, Paris, 1932, 96e année, nº 19, p. 371-374, fig. 1-3.
[*Aspidiotus perniciosus*].

LINK, GEORGE K. K. The rôle of genetics in etiological pathology. *The Quarterly Review of Biology*, Baltimore, U. S. A., 1932, Vol. VII, No. 2, pp. 127-171, figs. 1-3. List of literature, pp. 165-171.

LONG, H. C. Weeds of grass land. *Ministry of Agriculture and Fisheries, Bulletin No. 41*, London, 1932, pp. VI + 98, 92 figs. Short list of useful references in English, p. 94.

LUGAN, JACQUES. Air comprimé et sulfatages. *Le Progrès Agricole et Viticole*, Montpellier, 1932, 49e année, nº 34, p. 180-182.

MALENOTTI, E. Contro la tignola del melo. Sugli effetti differiti di alcuni insetticidi invernali. *Giornale di Agricoltura della Domenica*, Roma, 1932, anno XLII, n. 43, pp. 503-504, 4 figg.
[*Hyponomeuta padellus*].

MALENOTTI, ETTORE. Sul fluorosilicato di bario come insetticida. *L'Italia Agricola*, Roma, 1932, anno 69e, n. 8, pp. 741-757, figg. 1-7. Bibliografia, p. 757.

MARCHIONATTO, JUAN B. La roya amarilla del trigo en la zona central. Difusión de la plaga. Importancia económica. Medios de lucha. *República Argentina. Boletín del Ministerio de Agricultura de la Nación*, Buenos Aires, 1932, tomo XXX, n.º 4, págs. 215 a 221, 1 mapa.
[*Puccinia glumarum* f. sp. *Tritici*].

MARTELLI, GIUSEPPE M. Notizie biologiche e morfologiche sull'*Athalia colibri* Christ. e due suoi parassiti. *Bollettino del Laboratorio di Zoologia Generale e Agraria del R. Istituto Superiore Agrario in Portici*, Spoleto, 1932, vol. XXVI, pp. 313-333, figg. 1-9.
[The two parasites of *A. colibri*, found damaging seedbeds of *Brassica Rapa* in the vicinity of Taranto, are : *Perilampus italicus* and *Meigenia mutabilis*].

MATSUMOTO, TAKASHI, and SOMAZAWA, KÔETSU. Immunological studies of mosaic diseases. II. Distribution of antigenic substance of tobacco mosaic in different parts of host plants. *Journal of the Society of Tropical Agriculture*, Taiwan (Formosa), Japan, 1932, Vol. IV, No. 2, pp. 161-168.
[In English, with title and summary in Japanese].

MENOZZI, CARLO. Il pidocchio (*Aphis rumicis* L.) dannoso alla bietola da zucchero e la lotta contro di esso. *L'Industria Saccarifera Italiana*, Genova, 1932, anno XXV, n. 6, pp. 254-256, 2 figg.

MENTZEL, FRIEDRICH. Die Technik und Wirtschaftlichkeit der maschinellen Anwendung chemischer Schädlingsbekämpfungsmittel im Feldbau. Dresden - N., Druck von C. Heinrich, 1932, 106 S., 37 Abb. Schrifttum, S. 100-105.

MEYER, ANDRÉ. Recherches sur l'utilisation des matières colorantes organiques et de la 8-oxyquinoléine dans la lutte contre les maladies cryptogamiques de la vigne. *Revue de Viticulture*, Paris, 1932, 39e année, tome LXXVII, nº 1991, p. 117-120.

MILES, L. E., and PERSONS, T. D. Verticillium wilt of cotton in Mississippi. *Phytopathology*, Lancaster, Pa., 1932, Vol. 22, No. 9, pp. 767-773, fig. 1. Literature cited, pp. 772-773.
[*Verticillium alboatrum*].

MILLAN, ROBERTO. Catálogo de las publicaciones periódicas de la Argentina sobre agricultura. *República Argentina. Boletín del Ministerio de Agricultura de la Nación*, Buenos Aires, 1932, tomo XXX, n.º 4, págs. 223 a 306.
[Indicates also the periodicals dealing with Plant Pathology and Agricultural Entomology].

Miller, Paul R. Pathogenicity of three red-cedar rusts that occur on apple. *Phytopathology*, Lancaster, Pa., 1932, Vol. 22, No. 9, pp. 723-740, figs. 1-2. Literature cited, p. 740.
[*Gymnosporangium Juniperi-virginianae, G. germinale, G. globosum*].

Monte, Oscar. As cigarrinhas sugadoras. *Boletim de Agricultura, Zootecnia e Veterinaria*, Belo-Horizonte, 1932, ano V, num. 7, pags. 39-60, figs. 1-20. Bibliografia, pag. 60.
[Deals with various species belonging to the families *Membracidae, Cercopidae, Fulgoridae, Cicadellidae* and *Cicadidae*].

Munerati, O., e Milan, A. Sulla lotta diretta contro la ruggine del grano. *L'Italia Agricola*, Roma, 1932, anno 69, n. 9, pp. 791-797, figg. 1-6.
[*Puccinia*].

Nattrass, R. M. Cercospora disease of Calotropis procera. *Ministry of Agriculture. Egypt. Technical and Scientific Service. Bulletin No. 106*, Cairo, 1932, 6 pp., 7 pls.
[*Cercospora Calotropidis*].

Ogloblín, Alejandro A. Segundo informe sobre un nuevo parásito del trigo (*Prosaldius rufus* Hust.). *República Argentina. Boletín del Ministerio de Agricultura de la Nación*, Buenos Aires, 1932, tomo XXX, n.º 4, págs. 207 a 213, figs. 1-15.

Orton, C. R. Seed-borne parasites – A bibliography. *Agricultural Experiment Station, College of Agriculture, West Virginia University, Bulletin 245*, Morgantown, 1931, 47 pp.

Paoloni, Bernardo M. Ruggine del grano e andamento metcorologico. *La Meteorologia Pratica*, Perugia, 1932, anno XIII, n. 4, pp. 183-193.
[*Puccinia glumarum, P. graminis, P. triticina*].

Pasinetti, L. La patogenicità della « toile » in rapporto all'azione dei raggi X. *Rivista di Patologia Vegetale*, Pavia, 1932, anno XXII, n. 7-8, pp. 201-217, 1 tav. Bibliografia, pp. 216-217.
[*Botrytis cinerea*].

Pasinetti, L. Le variazioni micro-termo-elettriche in alcuni eumiceti patogeni delle piante irradiati con raggi X. Memoria I. *Rivista di Patologia Vegetale*, Pavia, 1932, anno XXII, n. 7-8, pp. 219-263, fig. 1, 4 diagr., 1 tav. Bibliografia, pp. 262-263.
[*Botrytis cinerea, Pythium De Baryanum*].

Petri, L. La lotta contro il mal secco dei limoni. *Il Coltivatore Siciliano*, Catania, 1932, anno XI, n. 9, pp. 257-264.
[*Deuterophoma tracheiphila*].

Pierstorff, A. L. A centralized scab-spray service. *Phytopathology*, Lancaster, Pa., 1932, Vol. 22, No. 9, pp. 759-766, figs. 1-2.
[*Venturia inaequalis*].

PORTER, D. R., and MELHUS, I. E. The pathogenicity of *Fusarium niveum* (E.F.S.) and the development of wilt resistant strains of *Citrullus vulgaris* (Schrad.). *Agricultural Experiment Station, Iowa State College of Agriculture and Mechanic Arts, Botany and Plant Pathology Section, Research Bulletin No. 149*, Ames, Iowa, 1932, pp. 123-184-a, figs. 1-12. Literature cited, pp. 183-184-a.

PRIEGO, J. MANUEL. Olivicultura. Primera edición. (Biblioteca Agrícola Salvat). Barcelona, Salvat Editores, S. A., 1932, 210 págs., 71 figs.

[Contains also : X. Patología del olivo (págs. 178 a 207, figs. 59-71)].

PRIESNER, H., and HOSNY, MAHMOUD. Contributions to knowledge of the white flies (*Aleurodidae*) of Egypt (I). *Ministry of Agriculture, Egypt. Technical and Scientific Service* (*Plant Protection Section*). *Bulletin No. 121*, Cairo, 1932, 8 pp., 6 pls.

[Full description in English, as a species new to science, of *Siphoninus granati* sometimes injurious to *Punica Granatum*. It is controlled by the parasite *Encarsia partenopea*, not previously reported in Egypt].

RACAH, VITTORIO. La « bolla » delle susine « Burbank » ed il suo trattamento. *Giornale di Agricoltura della Domenica*, Roma, 1932, anno XLII, n. 41, p. 477.

[Disease the cause of which is not yet surely known].

RAMÓN Y ACOSTA, DOMINGO. Investigaciones fitopatológicas. *Ministerio de Industrias. Dirección de Agronomía. Publicación Mensual*, Montevideo, 1932, año IV, n.º 10, págs. 195 y 196, figs. 1-3.

[*Bacterium Tonellianum*, *Fusarium* sp., *Colletotrichum oligochaetum*, *Asterocystis radicis*, *Exoascus Pruni*, *Fusarium Willkommii*].

RAVAGLIOLI, T. Ancora sulla morìa degli olmi. *Giornale di Agricoltura della Domenica*, Roma, 1932, anno XLII, n. 41, p. 481.

[*Graphium Ulmi*].

RAZOULS, PIERRE. Les nouveaux procédés d'application de bouillies cupriques pour la lutte contre le mildiou. *Bulletin International du Vin*, Paris, 1932, 5ᵉ année, nº 52, p. 34-45.

[*Plasmopara viticola*].

RONCORONI, ETTORE. La logica negli atti degli insetti. (Consorzio obbligatorio provinciale per la lotta contro il maggiolino e la processionaria del pino nella provincia di Varese). Varese, Tipografia Arcivescovile dell'Addolorata, 1932, 239 pp., 31 tav.

RUI, DINO BERNARDO, e GRECO, NUNZIO. Zolfi colloidali e minerali di zolfo nella lotta contro l'oidio o mal bianco del pesco (*Sphacrotheca pannosa* Lév.). *Note di Frutticoltura*, Pistoia, 1932, anno X, n. 10, pp. 173-177.

SAULNIER, J.-M. L'organisation de la défense des végétaux en France. *Bulletin du Comité de Propagande pour la Défense et l'Amélioration des Cultures* in *La Revue des Fruits, Légumes et Primeurs*, Paris, 1932, 3ᵐᵉ année, nº 10, p. 38-39.

Sindacato Nazionale Fascista [dei] Tecnici Agricoli. Gli uccelli, amici dell'agricoltore. Pubblicato a cura del Sindacato Nazionale Fascista dei Tecnici Agricoli, sotto gli auspici del Ministero dell'Agricoltura e delle Foreste, della Confederazione Nazionale Fascista degli Agricoltori, della Confederazione Nazionale dei Sindacati Fascisti dell'Agricoltura, del Comitato per la Protezione degli Uccelli Utili, del Comitato Nazionale Forestale, con prefazione di S. E. Arturo Maresciallchi, Sottosegretario all'Agricoltura, e introduzione dell'On. Tito Poggi, Senatore del Regno. Roma, Stabilimento Tipo-Rotocalcografico « Arte della Stampa », 1933-XI, 206 pp., 56 figg., 2 tav. a col.

[This publication, in which have collaborated : S. E. Principe Don Francesco Chigi della Rovere, Prof. Oscar De Beaux, Dr. Angiolo Del Lungo, Dr. Carlo Meschini and Dr. Giuseppe Urbani, contains 8 chapters and an appendix :—

1. Perchè si devono proteggere gli uccelli. – 2. Come si devono proteggere gli uccelli. – 3. La protezione degli uccelli nel mondo. – 4. Principii di etica biologica. – 5. Gli Osservatorii ornitologici e l'inanellamento degli uccelli. – 6. L'agricoltura e la legge Acerbo. – 7. La caccia, branca della zootecnia. – 8. Proposte di protezione degli uccelli d'Italia per specie ed epoche.

Appendice. – Gli uccelli nel regno animale].

Small, T. Prevention of blight in seed potatoes. *Nature*, London, 1932, Vol. 130, No. 3279, p. 367.

[*Phytophthora infestans*].

Sprague, Roderick. Notes on Phyllosticta rabiei on chick pea, II. *Phytopathology*, Lancaster, Pa., 1932, Vol. 22, No. 9, pp. 786-787.

Sprangers, A. A. C. Over Brachyderes incanus. *Tijdschrift over Plantenziekten*, Wageningen 1932, 38e jaarg., 9e aflev., blz. 205-209.

Sprengel, L. Die Bekämpfung der Kirschfruchtfliege (*Rhagoletis cerasi* L.). *Anzeiger für Schädlingskunde*, Berlin 1932, VIII. Jahrg., Heft 5, S. 49-51.

Staner, P. Maladies cryptogamiques de quelques plantes du Congo Belge. *Agriculture et Elevage au Congo Belge*, Bruxelles, 1932, 6ème année, nº 12, p. 138-139.

[*Ustilago Zeae* on maize, *Piricularia grisea* on rice, *Sphacelotheca cruenta* and *Puccinia purpurea* on sorghum, *Cercospora personata* and rosette disease on groundnuts].

Takei, Sankichi, Miyajima, Shikiro, und Ōno, Minoru. Über Rotenon, den wirksamen Bestandteil der Derriswurzel, I-XIII. Mitteilung. *Memoirs of the College of Agriculture, Kyoto Imperial University*, Kyoto, Japan, 1932, No. 23 (Chemical Series, No. 13), pp. 1-26.

Thaxter, Roland. Contribution towards a monograph of the Laboulbeniaceae. Part V. *Memoirs of the American Academy of Arts and Sciences*, Lancaster, Penna., 1931, Vol. XVI, Pt. I, pp. 1-435, fig. A, pls. I-LX.

[This fifth contribution to the well-known and highly valuable monograph on the Laboulbeniaceae will be welcomed by all who are concerned with the study of these singular fungi. The work of R. Thaxter is in fact the most complete and most modern taxonomic guide on the subject that exists.

With this new part the author had intended to complete the series, including therein all the forms published or assembled after the appearance of the first two

parts. But the task became so heavy that it was found necessary to shorten the text, excluding the large gen. *Laboulbenia* and to reduce the number of illustrations. Unfortunately the recent untimely death of the author has prevented the realisation of his proposed scheme of publishing a final part illustrating the gen. *Laboulbenia* and other *addenda* not included in this volume, in connexion with a general survey and classification and an index of hosts.

In Part V of the monograph are included 90 genera, 32 of which are new to science. There are also numbers of new species.

The 60 plates including 1136 clear figures drawn by the author enhance the value of the work].

TOMAS, ROGER. Periodical failure of the Punjab-American cotton crop. *Agriculture and Live-stock in India*, Calcutta, 1932, Vol. II, Pt. III, pp. 243-274, pls. VII-IX, chart I. References, p. 274.

[The writer considers the cause of damage is *Bemisia gossypiperda*].

TORTI, MARIO. Un esperimento di lotta collettiva contro le grillotalpe. *Bullettino dell'Agricoltura*, Milano, 1932, anno 66°, n. 33-34, pp. 1-2.

[By means of rice poisoned with fluosilicate of barium].

TRAVASSOS, LAURO. Una specie del genere *Neoaplectana* Steiner (*Nematoda-Oxyuridae*) parassita del *Conorrhynchus* (*Cleonus*) *mendicus* Gyll (*Coleoptera-Curculinidae*). *Bollettino del Laboratorio di Zoologia Generale e Agraria del R. Istituto Superiore Agrario in Portici*, Spoleto, 1932, vol. XXVI, pp. 115-118, figg. A-B.

[*Neoaplectana menozzii*. Description of the new species in Italian].

TRUFFAUT, GEORGES, et PASTAC, L. Existe-t-il un traitement idéal des arbres fruitiers ? *Revue générale des Sciences pures et appliquées*, Paris, 1932, t. XLIII, n° 12, p. 354-356, fig. 1-2.

[UNION GÉNÉRALE DES ASSOCIATIONS AGRICOLES – CAISSE CENTRALE D'ASSURANCES MUTUELLES DU MAROC]. Prévoyance contre les calamités agricoles. *La Terre Marocaine*, Casablanca, 1932, n° 13, p. 23-37.

VAN DER MEER MOHR, J. C. Entomologische Aanteekeningen, II. – A. Pycnoscelus surinamensis L., een nieuwe vijand van Deli-tabak. B. Over schade aan jonge tabak door engerlingen. C. Beschadiging van gefermenteerde tabak door Anomala viridis F. en Pentelia discedens Sharp. *Mededeelingen van het Deli Proefstation te Medan-Sumatra*, Batavia (C.) 1932, Tweede Serie, No. LXXVI, blz. 3-16, fig. I-IV.

[In Dutch, with title and summary in English. A. — *P. surinamensis* injurious to tobacco in Deli. B. — Damage by *Lepidiota stigma* to young tobacco. C. — Damage by *A. viridis* and *P. discedens* to fermented tobacco].

VAN DILLEWIJN, C. Rattenbestrijding door middel van thallium. *De Bergcultures*, Batavia - C. 1932, 10 jaarg., no. 35, blz. 922-925, 1 fig.

VIVARELLI, LUIGI. Zolfi greggi e solforazioni. *L'Agricoltura Razionale*, Roma, 1932, anno IV, n. 5, pp. 141-143.

VOGLINO P. Sopra un grave deperimento delle foglie di nespolo. *Bollettino del Laboratorio Sperimentale* (*Regio Osservatorio Regionale*) *di Fitopatologia*, Torino, 1932, anno 9°, n. 5, pp. 69-70.

[*Entomosporium Mespili* and *Phyllactinia suffulta* on *Mespilus germanica* in the valley of Susa].

WAHL, BRUNO. Einschleppung der San-José-Schildlaus in Mitteleuropa. *Wiener Landwirtschaftliche Zeitung*, Wien 1932, 82. Jahrg., Nr. 22, S. 171-172. [*Aspidiotus perniciosus*].

WEBER, GEORGE F. Blight of peppers in Florida caused by Phytophthora capsici. *Phytopathology*, Lancaster, Pa., 1932, Vol. 22, No. 9, pp. 775-780, figs. 1-4.

WOLLENWEBER, H. W., und RICHTER, H. Die Douglasienschütte und ihr Erreger, *Rhabdocline pseudotsugae* Syd. *Nachrichtenblatt für den Deutschen Pflanzenschutzdienst*, Berlin 1932, 12. Jahrg., Nr. 9, S. 71-74, Abb. I-IV. Literaturverzeichnis, S. 73-74.

WORMALD, H. A bacterial disease of lilacs. *The Gardeners' Chronicle*, London, 1932, Vol. XCII, Third Series, No. 2381, pp. 116-117, figs. 62-65. [*Bacterium* (*Pseudomonas*) *Syringae* reported as occurring in England].

WORMALD, H. Blossom wilt of fruit trees. *The Journal of the Ministry of Agriculture*, London, 1932, Vol. XXXIX, No. 7, pp. 620-626, figs. 1-2. [*Sclerotinia cinerea*].

NOTES

Committee of Propaganda for the Protection and Improvement of Crops in France. — With a view to the spread in France of the methods for improving farm yields by means of the protection of crops from diseases and pests which are in use throughout the world, a Committee has been formed in Paris for propagating the protection and improvement of crops. It publishes in *La Revue des Fruits, Légumes et Primeurs* a monthly bulletin to supplement the information issued by the Committee in the form of pamphlets, leaflets and posters.

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